

CLAIMS:

- 1 A Terrestrial Radio Access Network for the Universal Mobile Telephone System (UTRAN) comprising at least one first Radio Network Controller and at least one Node B associated with said first Controller
5 across an Iub interface, said first Controller and said Node B operating Internet Protocol, comprising, when there is a requirement for signaling and/or data traffic to cross the Iub interface, the first Radio Network Controller is arranged to set up at least one IP tunnel across the Iub interface and signaling and data information are encapsulated in IP packets.
- 10 2 A UTRAN according to Claim 1 in which the first Controller is further arranged to communicate with a further Radio Network Controller across an Iur interface, in which, when there is a requirement for signaling and/or data traffic to cross the Iur interface, the first and the further Radio Network Controllers are arranged to set up at least one IP tunnel across the
15 Iur interface, and signaling and data information are encapsulated in IP packets.
- 3 A UTRAN according to Claim 1 in which each IP tunnel carries at least one of the transport channels of the Universal Mobile Telephone System.
- 20 4 A UTRAN according to Claim 3 in which the IP tunnel carries at least two transport channels which are multiplexed.
- 5 A UTRAN according to Claim 4 in which spare bits after the transmission of the Session Data Unit length in the data frame of each IP packet are arranged to carry the identity of at least two transport channels.
- 25 6 A UTRAN according to Claim 4 in which a one byte field in the common header structure of the channel frames is allocated to carry the identity of the at least two transport channels.
- 7 A UTRAN according to Claim 3 in which each IP tunnel is dedicated to a specific transport channel.

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ABSTRACT

In a UTRAN for an all-IP UMTS, an RNC 26 is arranged to set up IP tunnels across the Iub interface to the Node Bs 24 it controls, or across the Iur interface to other RNCs 28. Selected transport channels pass through
5 the IP tunnels, encapsulated in IP packets. The transport channels may be multiplexed, or dedicated IP tunnels may be set up for each selected transport channel.

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